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ABSTRACT

The purpose of this study was to develop and test a rewriting instrument in French that would be a valid indicator of the level of syntactic development of American students in French. Vocabulary is limited to those words found in the first level of "Ecouter et Parler;" only the present tense was used in the tests. The theory on which the tests are based is derived from Dr. Kellog Hunt's work in "syntactic maturity" in English tests developed for American school children. Sample tests and results from an experimental evaluation are included. (RL)

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MEASURING THE SYNTACTIC DEVELOPMENT OF AMERICAN STUDENTS OF FRENCH

James H. Monroe

Author's Note: This is the text of a talk delivered at the Florida Chapter Meeting of the AATF on March 30, 1973, at Jacksonville, Florida, and concerns the preliminary results of a dissertation study in Foreign Language Education at Florida State University. The dissertation, with the same title as that above, was completed in August, 1973.

First of all, I'd like to thank Dr. Abraham, Dr. Frechette, and the Florida AATF for giving me the opportunity to discuss my research with you. In my long search for a feasible dissertation project in Foreign Language Education, I had just about reached the stage where I would have been willing to write on just about any subject acceptable to my committee. But since becoming involved in the research that I finally chose to do, I've become very enthusiastic about it, and I honestly believe it will be a significant contribution to our knowledge of foreign language learning.

The title of my study is "Measuring the Syntactic Development of American Students of French." American foreign language teachers generally seem to agree that their students overall goal should be to communicate effectively in the target language. In other words, we want to develop some degree of "fluency" in our students. Fluency is hard to define and even harder to evaluate by any objective means. Part of fluency has to do with the words a student can use and understand. And vocabulary fluency is relatively easy to teach and to test. But syntactic fluency—or how the student puts his words and phrases together—is not so easy to teach and to test. We tend to test syntactic fluency by mostly subjective methods without really knowing why one student is syntactically well-developed and another is not. The central task of my study was to develop and test a purely objective, easy-to-administer, easy-to-score

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instrument to measure the syntactic development of American students of French. I believe that I have developed such an instrument.

The best way I know to demonstrate how my instrument works is to have each of you take and score the test yourself. After you complete the test (which will take about ten minutes), I'll explain the rationale behind it, give you the results of my own experiment, and then explain how to score the tests. Remember, you'll score the test yourself, so don't worry about anyone else knowing your scores. The test with the instructions is on the first page of your handout (page 10).

Now that you've completed your test, put it aside, and I'll tell you how it was developed.

My study is based on the work of Dr. Kellogg Hunt, a professor of English at Florida State University. In a series of large-scale studies, Hunt and his colleagues discovered what have proven to be valid, reliable, and objective measures of what Hunt calls "syntactic maturity" in the English of American schoolchildren.

Briefly I'll describe Hunt's basic procedures for measuring the syntactic development of English-speaking subjects in their native language. He takes a minimum of 500 words from each student's regular classroom writing. For each sample of 500 words he computes the following five factors:

1. Mean number of words per clause;
2. Mean number of clauses per T-Unit (I'll explain T-Unit shortly);
3. Mean number of words per T-Unit;
4. Mean number of T-Units per sentence;
5. Mean number of words per sentence.

"T-Unit" is short for "minimal terminal unit." It is defined by Hunt as an independent clause and all subordinate clauses attached to it. Hunt uses

the T-Unit because he found that frequent coordination of independent clauses is often a sign of immaturity in speech and writing. He found that mean T-Unit length was a better index of syntactic maturity than mean sentence length.

Hunt's work (which has been replicated and validated by the studies of numerous other researchers), has shown conclusively that as students grow older, they write (and speak) longer clauses, T-Units, and sentences. When they first begin serious writing (at about the fourth grade), they write very short T-Units with very few subordinate clauses—they often connect their T-Units with lots of ands and buts or with no conjunction at all. In later grades they begin to use more subordinate clauses. This causes mean T-Unit length to increase significantly. And finally, as they become syntatically mature, they write longer and longer clauses. And this causes both mean words per T-Unit and mean words per clause to increase significantly. Hunt believes that the best indication of syntactic maturity is how much information one can pack into a single clause. This belief is substantiated by the fact that the skilled adult writer writes much longer clauses than does the high school senior.

Basically then, Hunt's research has shown that a student's syntactic maturity is closely related to his ability to combine short T-Units into longer ones. This is done by subordination or reducing simple sentences to even less than clauses and embedding them into other clauses. For example, let's consider these two very short T-Units: I have a son and He is ten years old. They could be combined by coordination: I have a son and he is ten years old. In general, coordinating T-Units of this sort would be considered rather immature. Now let's combine the two T-Units into one by subordination: I have a son who is ten years old. This is a more mature way to say the same thing. We used only one T-Unit but two clauses. Now we'll combine the two T-Units into

only one clause: I have a ten-year-old son. Here the second T-Unit has been reduced to less than a clause—a simple modifier. In these three examples sentence length decreased from ten to nine to seven words. Average T-Unit length went from five to nine to seven words. And average clause length went from five to four and one half to seven words. In general, as I said before, the syntactically mature writer uses longer clauses. And in this simple example it does seem to be true that the most mature way to combine these two T-Units is into a single clause more lengthy than either of the two original clauses. Of course, this is not always true. And we need samples much larger than two sentences in order to determine syntactic maturity.

Based on the results of Hunt's basic research, practical experiments have been done with schoolchildren by giving them intensive, systematic practice in sentence-combining techniques. After such practice these children do develop much faster syntactically than those who don't get the special drills. Their writing not only proves to be superior by Hunt's objective measures, but also by the subjective evaluations of English teachers.

But we are interested in measuring the syntactic development in French as a foreign language, and I've finally arrived at that point in my discussion. Two doctoral students at Florida State University have demonstrated that Hunt's five indexes of syntactic maturity are equally applicable to students' learning a foreign language. One used Hunt's methods to describe the syntactic development of four Spanish-speaking adults learning English. The other used similar techniques to show that the syntax of American college students of German develops very similarly to native language syntax. Based on the results of these two studies, I felt confident in using Hunt's techniques in my study of French language development.

The studies discussed so far have measured free-writing in which little

control is exercised over what the students write. Samples of at least 500 words of free writing per student must be taken in order to get reliable results. Analyzing many samples that large is quite a task. And individual samples can not be easily compared.

More recently, Hunt and his colleagues came up with a modified technique for measuring syntactic development that seems to be equally valid and reliable and much easier to administer and score. It is called "rewriting" (as opposed to freewriting). The students are given a short, simple passage composed of very short "kernel" sentences. They are then asked to "rewrite the passage in a better way." The rewritten passages can be scored in a few minutes each. Passages written at different levels of development can be easily compared in order to determine exactly how progressively more mature students handle the same kernel sentences. Hunt believes that his English rewriting passage is even more sensitive to syntactic differences than free writing samples are (Hunt's rewriting passage is on page 11).

The purpose of my study was to develop and to test a rewriting instrument in French that would be a valid indicator of the level of syntactic development of American students of French. I wanted to use the same instrument to test students at every level of study. Vocabulary had to be minimized as a factor. I limited the vocabulary to those words found in the first degree of Le Français fondamental, in the first level of A-LM, and in the first level of Ecouter et Parler. Only the present tense was used. I tried to include kernel sentences that would elicit the most common sentence-combining transformations and those that could be combined in a variety of ways.

Limited as I was, (and even further limited by a not-too-keen imagination), devising a French rewriting instrument was not easy. But judging from the results of my study, the passage I finally did develop did do its job fairly well.

I gave the test to 110 subjects at five different levels:

Level 1-College Freshmen (third quarter);

Level 2-Sophomores;

Level 3-Juniors and Seniors;

Level 4-Graduate Students;

Level 5-Native Speakers.

The mean scores for all these groups on six factors of syntactic maturity are shown on page 2 of your handout (page 12 of this paper). The statistical significance of differences between groups is indicated below the scores. Graphic descriptions of how the first five factors change from level to level are shown on the next two pages.

Notice that words per clause shows a steady increase from level to level but increases most sharply at the upper levels.

The next factor, clauses per T-Unit, indicates the subordination ratio. A ratio of 1.5, for example, would mean that for every two independent clauses, there is one subordinate clause. Progressively advanced students use more subordinate clauses, but the rate of increase declines at the upper levels.

Words per T-Unit shows a fairly stable straight line increase across levels.

T-Units per sentence indicates the coordination ratio. The higher this ratio the more the subjects tend to combine T-Units with coordinating conjunctions. Notice that there is a significant decline in this ratio from the lower to the higher levels. Native speakers in particular did not coordinate many independent clauses.

Words per sentence also increases at a steady rate, but this factor did not prove to be as good an index of syntactic maturity as either words per clause or words per T-Unit.

The last factor on the table indicates the number of original kernel

sentences reduced even further than clauses—maybe to adjectives, appositives, prepositional phrases, or participles. This factor is closely related to clause length, but the correlation is not perfect, and the two factors deserve separate consideration.

From the results of my experiment, the best indexes of syntactic maturity appear to be Words per Clause, Words per T-Unit, and Kernel Sentences Reduced to Less Than a Clause. The last factor appears to be the most sensitive overall.

What conclusions and implications can be drawn from this experiment?

First of all, (according to my test), students progress syntactically very slowly at the early levels of study. It is not until the very late stages that they even approach native competency. My test did not prove to be very successful in lower level discrimination.

This study confirms once again that students learning a foreign language progress syntactically in much the same way as they do in their native language. This implies, perhaps, that the foreign language should be <u>taught</u> more like the native language is <u>learned</u>.

Since the evidence is overwhelming that sentence-combining ability is closely related to syntactic maturity, it seems obvious that intensive, systematic practice in sentence-combining techniques would certainly expedite the syntactic development of foreign language students.

Finally, a rewriting instrument such as the one I have developed, once validiated by several experimental replications, would be an excellent diagnostic and placement test to determine the degree of syntactic development of individual classes and to show in what areas they are deficient. If repeated applications of such tests produce similar results, one could be at least 90% certain that these instruments could accurately measure the level of development

of any French class with ten or more students.

A warning should be inserted here. One should be very careful in using a rewriting test to assess the syntactic maturity of individual students. Styles of writing vary a great deal from person to person. Some very good writers tend to use very short clauses and sentences. Some poor writers use very long ones. In large samples of subjects, however, these extremes usually cancel out.

Now let's score your rewritten passages. First, count the total number of words. Words separated by hyphens or apostrophees are two words. You will probably have a total of between 100 and 150 words.

Next count the number of sentences. Every group of words beginning with a capital letter and ending with a period is a sentence. It is helpful to put slash (/) marks between the various syntactic units as we progress from sentence to T-Unit to clause.

Now count the number of T-Units. Any group of words that could stand alone as a complete sentence is a T-Unit. A T-Unit consists of one independent clause and any dependent clauses attached to it.

Next, count the number of clauses. A clause is any group of words that has a subject and its corresponding finite or conjugated verb. In other words you are totaling the number of independent and dependent clauses. Present and past participles, gerunds, and infinitive constructions do not count as separate clauses.

With these four figures you can now claculate the first five factors listed on the table by simply dividing appropriately. Just divide the number of clauses into the number of words, for example, to get words per clause. Then you can determine your level of development according to the results of my study.

In conclusion, I have a favor to ask of each of you. Try out my test in

your French classes. The results may be very revealing and helpful. Or we may find that it doesn't work very well at certain levels. In any case, I'd like to know what your results are. One experiment of this kind is of little value unless several replications produce similar results.

Name_____
Social Security Number_____
Number of years of high school French_____
Name of high school_____ County_____ State_____
Number of quarters or semesters of college French: Quarters_____ Semesters_____
Are you a native speaker of French? Yes_____ No _____
Have you had any substantial exposure to French outside of school? Yes_____ No_____
If yes, explain:_____

Directions: Read the following passage all the way through. You will notice that the sentences are short and choppy. Study the passage, and then rewrite it in a better way. You may combine sentences, change the order of words, and omit words that are repeated too many times. But try not to leave out any of the information.

Henri est professeur. Il travaille à l'université. Il habite à Paris. Françoise est sa femme. Elle travaille en ville. Ils ont deux enfants. Marie est leur fille. Elle a dix ans. Jean est leur fils. Il a huit ans. Ils ont un appartement. Il est petit. Mais c'est un joli appartement. Il est dans une maison. Cette maison n'est pas grande. Elle n'est pas petite. Un cinéma est en face.

C'est aujourd'hui lundi. Il est sept heures. C'est le matin. Henri est au lit. Françoise prépare le petit déjeuner. Les enfants dorment. Bientôt leur mère les appelle. Ils mangent vite. Leurs classes commencent à huit heures. Il fait beau. L'école est tout près. Ils y vont à pied. Robert les accompagne. C'est leur voisin. Ce sont de bons amis. Ils arrivent à l'école. Il n'est pas encore huit heures.

TIME LIMIT IS 30 MINUTES! DO ALL YOUR WORK AT THE BOTTOM OF THIS PAPER!

Name_____
Social Security Number_____

Directions: Read the following passage all the way through. You will notice that the sentences are short and choppy. Study the passage, and then rewrite it in a better way. You may combine sentences, change the order of words, and omit words that are repeated too many times. But try not to leave out any of the information.

TIME LIMIT IS 30 MINUTES! DO ALL YOUR WORK AT THE BOTTOM OF THIS PAPER!

ALUMINUM

Aluminum is a metal. It is abundant. It has many uses. It comes from bauxite. Bauxite is an ore. Bauxite looks like clay. Bauxite contains aluminum. It contains several other substances. Workmen extract these other substances from the bauxite. They grind the bauxite. They put it into tanks. Pressure is in the tanks. The other substances form a mass. They remove the mass. They use filters. A liquid remains. They put it through several other processes. It finally yields a chemical. The chemical is powdery. It is white. The chemical is alumina. It is a mixture. It contains aluminum. It contains oxygen. Workmen separate the aluminum from the oxygen. They use electricity. They finally produce a metal. The metal is light. It has a luster. The luster is bright. The luster is silvery. The metal comes in many forms.

MEAN SCORES ON SIX FACTORS OF SYNTACTIC MATURITY FROM 110 SUBJECTS ON THE FRENCH REWRITING TEST

LEVELS	Words/Clause	Clauses/T-Unit	Words/T-Unit	T-Units/Sentence	Words/Sentence	Kernel Sentences Reduced to Less Than a Clause
1	5.83	1.30	7.62	1.31	9.90	10.03
2	5.94	1.40	8.34	1.28	10.57	11.28
3	6.34	1.47	9.39	1.25	11.66	12.17
4	7.20	1.53	11.01	1.23	13.48	14.94
5	8.02	1.49	12.56	1.10	13.78	17.25

STATISTICAL SIGNIFICANCE BETWEEN ADJACENT GROUPS

LEVELS	Words/Clause	Clauses/T-Unit	Words/T-Unit	T-Units/Sentence	Words/Sentence	Kernel Sentences Reduced to Less Than a Clause
1-2	N.S.	P< .10	P< .20	N.S.	N.S.	P< .10
2-3	P< .10	N.S.	P< .10	N.S.	P< .20	N.S.
3-4	P< .005	N.S.	P< .025	N.S.	P< .05	P< .005
4-5	P< .005	N.S.	P< .05	P< .05	N.S.	P< .01

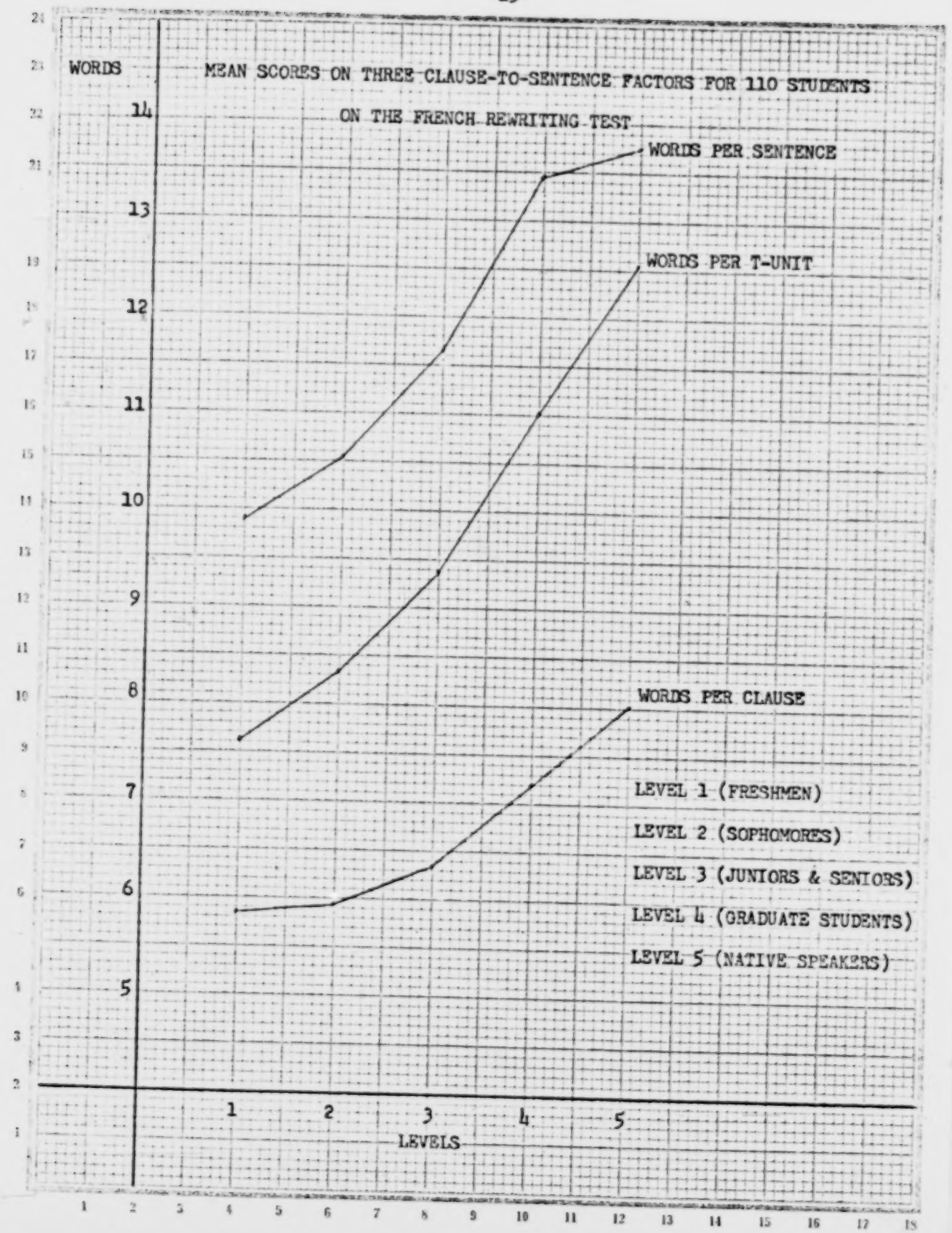
STATISTICAL SIGNIFICANCE BETWEEN OTHER GROUPS

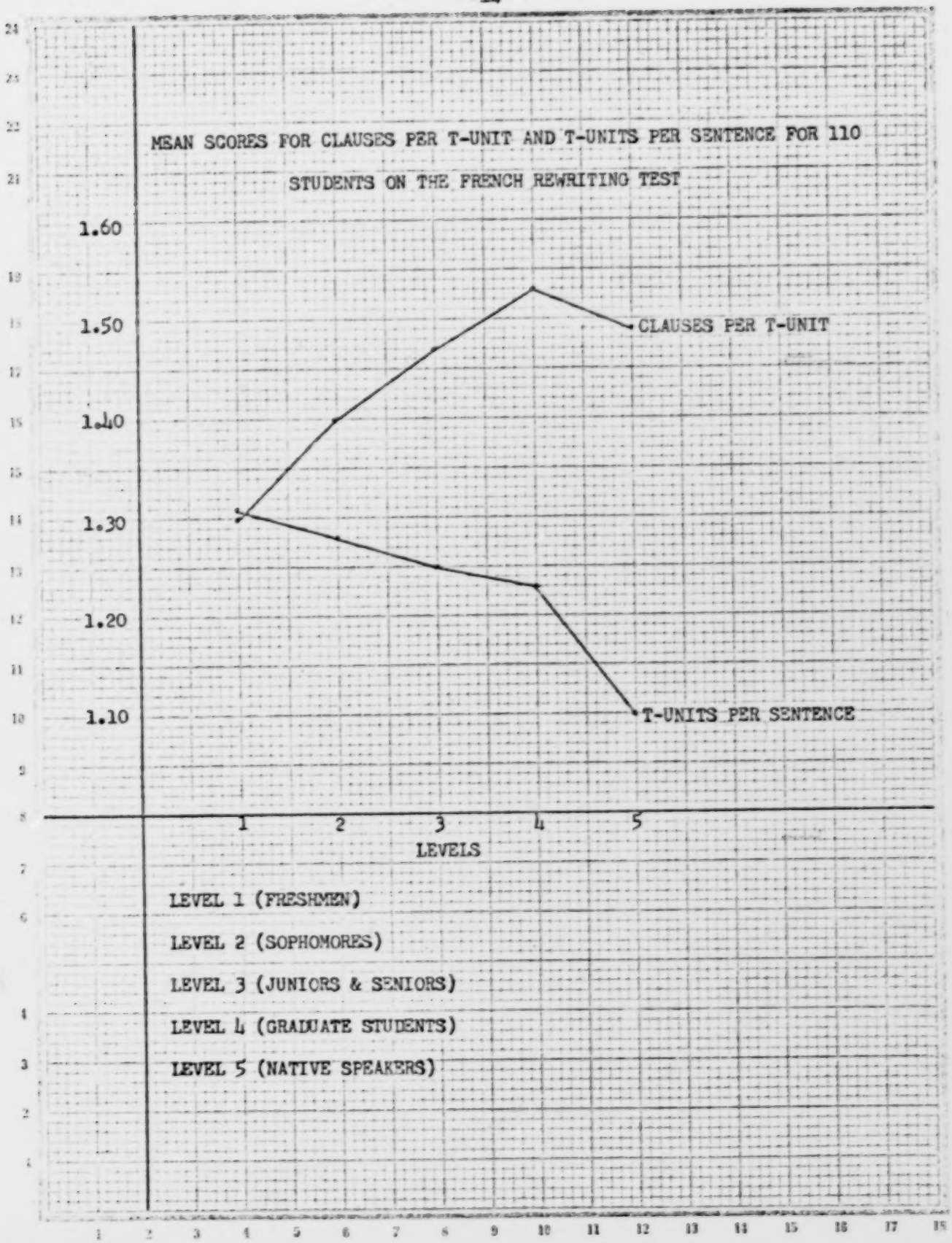
LEVELS	Words/Clause	Clauses/T-Unit	Words/T-Unit	T-Units/Sentence	Words/Sentence	Kernel Sentences Reduced to Less Than a Clause
1-3	P< .05	P< .005	P< .005	P< .20	P< .025	P< .005
1-4	P< .001	P< .001	P< .001	P< .10	P< .001	P< .001
1-5	P< .001	P< .001	P< .001	P< .001	P< .001	P< .001
2-4	P< .001	P< .10	P< .001	N.S.	P< .001	P< .001
2-5	P< .001	P< .025	P< .001	P< .001	P< .001	P< .001
3-5	P< .001	N.S.	P< .001	P< .01	P< .025	P< .001

Level 1 (Freshmen)
Level 2 (Sophomores)
Level 3 (Jrs. & Srs.)
Level 4 (Graduates)
Level 5 (Natives)

P Probability

N.S. Not Significant


WORDS
MEAN SCORES ON THREE CLAUSE-TO-SENTENCE FACTORS FOR 110 STUDENTS
ON THE FRENCH REWRITING TEST
WORDS PER SENTENCE
WORDS PER T-UNIT
WORDS PER CLAUSE
LEVEL 1 (FRESHMEN)
LEVEL 2 (SOPHOMORES)
LEVEL 3 (JUNIORS & SENIORS)
LEVEL 4 (GRADUATE STUDENTS)
LEVEL 5 (NATIVE SPEAKERS)
14
13
12
11
10
9
8
7
6
5
1
2
3
4
5
LEVELS


MEAN SCORES FOR CLAUSES PER T-UNIT AND T-UNITS PER SENTENCE FOR 110 STUDENTS ON THE FRENCH REWRITING TEST
1.60
1.50
1.40
1.30
1.20
1.10
CLAUSES PER T-UNIT
T-UNITS PER SENTENCE
1
2
3
4
5
LEVELS
LEVEL 1 (FRESHMEN)
LEVEL 2 (SOPHOMORES)
LEVEL 3 (JUNIORS & SENIORS)
LEVEL 4 (GRADUATE STUDENTS)
LEVEL 5 (NATIVE SPEAKERS)